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EXAMINER

NOORISTANY, SULAIMAN

ART UNIT	PAPER NUMBER
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2146

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/749,702	MOHANDAS, RAVIKUMAR	
	Examiner	Art Unit	
	Sulaiman Nooristany	2109	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-34 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All
 - b) Some
 - * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>07/08/2005</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| | 6) <input type="checkbox"/> Other: _____. |

Detailed Action

This Office Action is response to the application (10749702) filed on 31 December 2003.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 4 and 34 are rejected under 112, second paragraph as being indefinite for failing to particularly point and distinctly claim the subject matter which applicant regards as the invention. However the claims will be given a broad reasonable interpretation for the purposes of examination as best understood.

As per claim 4 & 34, line 2, it is not clearly indicated whether "dynamic DHCP" is the same as "DHCP".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a), which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 8-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Gu**. U.S. App No. **US 2004/0260800** in view of **Oakano**. U.S. App. No. **US 2002/0062485**.

Regarding claim 1, Gu, teaches wherein a client device comprising:

an ad-hoc client to manage connection of said client device to an ad-hoc wireless network (**ad-hoc self-set by devices to interoperate with other devices on a network – Abstract, lines 3-4, Fig. 25, unit 852 -- WAN**);

a DHCP client to send a DHCP discover message in response to a command from said ad-hoc client (**Fig. 29, unit 900 -- computing device, unit 950 --Client device send a (DHCP BROADCAST) discover message**); and

a tinyDHCP unit (**router, modem, client terminal**) to sense said DHCP discover message (**Fig. 29, unit 900 -- computing device, unit 950 -- client device receive (DHCP BROADCAST) discover message**)

With respect to claim 1, Gu teaches well the invention set forth above except for the claimed “*allocate an IP address for the client device in response thereto*”.

Okano teaches that it is well known to *allocate an IP address for the client device in response thereto* (**a DHCP to dynamically allocate an IP address to a subscriber terminal – Abstract, lines 1-2, a dynamic IP address allocation is automatically performed by the DHCP – Page. 1, [0006]**).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Gu’s invention by utilizing the DHCP system for allocating an IP address to the client device in response to receiving a DHCP discover message

whereas dynamic allocation is the only method which provides dynamic re-use of IP addresses. A network administrator assigns a range of IP addresses to DHCP, and each client computer on the LAN has its TCP/IP software configured to request an IP address from the DHCP server when that client computer's network interface card starts up. The request-and-grant process uses a lease concept with a controllable time period (as taught by Okano).

Regarding claim 2, Gu and Okano together taught the client device of claim 1, as described above. Gu further teaches wherein, a packet driver to provide raw access to a wireless network medium for at least the tinyDHCP unit without using sockets functionality (FIG. 25, unit 852 include a wide area network (WAN), FIG. 30, a client that accesses and uses the embedded computing device 900 over the computer network has an exemplary client software architecture 950, which includes software code modules for applications 952, simple discovery 954, XML 955, LDAP 956, TCP/IP stack 958 (WinSock) and a network interface card (NIC) 960 that provides a physical connection to the computer network – Page. 30, [0559]).

Regarding claim 3, Gu and Okano together taught the client device of claim 2, as described above. Gu further teaches wherein, said packet driver is a part of a packet capture library (a set-up and configuration process through which appropriate driver software is installed by a user or administrator onto the host for use in controlling the peripheral – Page. 1, [0006]).

Regarding claim 4, Gu and Okano together taught the client device of claim 1, as described above. Okano further teaches wherein, said tinyDHCP unit uses dynamic DHCP allocation (**DHCP to dynamically allocate an IP address – Abstract, lines 1-2**).

Regarding claim 5, Gu and Okano together taught the client device of claim 1, as described above. Gu further teaches wherein, said DHCP client sends said DHCP discover message to a predetermined port that is monitored by said tinyDHCP unit (**TCP/IP provides the ability to initiate a connection with a specified application running on a specific device provided both the network address of the device (IP address) and the application address (port) are known – Page. 7, [0122], a TCP socket using its IP address and an arbitrary port number. This address/port pair will be referenced by all incoming URL requests – Page. 23, [0398]**).

Regarding claim 6, Gu and Okano together taught the client device of claim 1, as described above, Okano further teach tinyDHCP unit tests the availability of said IP address (**the DHCP reply packets in response to the DHCP discovers and in which IP addresses pooled by the DHCP servers – Page. 5, [0092]**).

Regarding claim 8, Gu and Okano together taught the client device of claim 1, as described above. Okano further teaches wherein, said tinyDHCP unit sends a DHCP

offer (Fig. 2, DHCP OFFER -- M6, M8) that includes the IP address (Fig. 1, - M12
(REGISTERATION OF IP1 (IP ADDRESS) in FILTERING TABLE BY DHCP))

Regarding claim 9, Gu and Okano together taught the client device of claim 8, as described above. Okano further teaches wherein, said tinyDHCP unit sends said DHCP offer to a predetermined port that is monitored by said DHCP client (**listener will listen on a TCP port for notifications sent – Page. 17, [0282], DHCP or client device listens for incoming connection requests on that socket and sets itself up to accept any incoming connections – Page. 23, [0399]**).

Regarding claim 10, Gu and Okano together taught the client device of claim 8, as described above. Okano further teaches wherein, said DHCP client senses said DHCP offer and sends a DHCP request based thereon [**see above rejection**], wherein said DHCP request includes said IP address (Fig. 2, **DHCP REQUEST (M9) from subscriber terminal**).

Regarding claim 11, Gu and Okano together taught the client device of claim 10, as described above. Okano further teaches wherein, said DHCP client verifies availability of said IP address before sending said DHCP request (**the DHCP reply packets in response to the DHCP discovers and in which IP addresses pooled by the DHCP servers – Page. 5, [0092]**).

Regarding claim 12, Gu and Okano together taught the client device of claim 10, as described above. Gu further teaches wherein, said tinyDHCP unit senses said DHCP request and sends a DHCP acknowledge (ACK) message in response thereto (**Fig. 2, (DHCP “ACK” -- M11 & M12)**). Okano further teaches wherein a DHCP acknowledge (ACK) message from within the client device (**Fig. 24, user control point send “200 OK”**).

Regarding claim 13, Gu and Okano together taught the client device of claim 1, as described above. Gu, further teaches wherein, said tinyDHCP unit (**modem, router, client computer, server**) is associated with a user interface to allow a user to specify DHCP parameters (**UPnP uses SSDP to allow User Control Points to find Controlled devices and Services. SSDP operates in a default, completely automatic multicast UDP/IP based mode in addition to a server-based mode that uses TCP/IP for registrations and query – Page. 6, [0093]**).

Regarding claim 14, Gu teaches wherein a method for use in connecting a client device to an ad-hoc network (**ad-hoc self-set by devices to interoperate with other devices on a network – Abstract, lines 3-4, Fig. 25, unit 852 (LAN or WAN)**), comprising:

sending a DHCP discover message from within the client device (Fig. 29, unit 900 (computing device), unit 950 (Client device) send a (DHCP BROADCAST) discover listener (message));

receiving said DHCP discover message within the client device (**Fig. 29, unit 900 (computing device), unit 950 (client device) receive (DHCP BROADCAST) discover response (message)**); and

With respect to claim 14, Gu teaches well the invention set forth above except for the claimed “*allocating an IP address to the client device in response to receiving said DHCP discover message, within the client device*”.

Okano teaches that it is well known to *allocating an IP address to the client device in response to receiving said DHCP discover message, within the client device* (**a DHCP to dynamically allocate an IP address to a subscriber terminal – Abstract, lines 1-2, a dynamic IP address allocation is automatically performed by the DHCP – Page. 1, [0006]**).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Gu’s invention by utilizing the DHCP system for allocating an IP address to the client device in response to receiving a DHCP discover message where as dynamic allocation is the only method which provides dynamic re-use of IP addresses. A network administrator assigns a range of IP addresses to DHCP, and each client computer on the LAN has its TCP/IP software configured to request an IP address from the DHCP server when that client computer’s network interface card starts up. The request-and-grant process uses a lease concept with a controllable time period (as taught by Okano).

Regarding claim 15, Gu and Okano together taught the method of claim 14, as described above. Gu further teaches wherein, sending includes sending said DHCP discover message to a predetermined port (**TCP/IP provides the ability to initiate a connection with a specified application running on a specific device provided both the network address of the device (IP address) and the application address (port) are known – Page. 7, [0122]**, a TCP socket using its IP address and an arbitrary port number. This address/port pair will be referenced by all incoming URL requests – Page. 23, [0398]).

Regarding claim 16, Gu and Okano together taught the method of claim 15, as described above. Okano further teaches wherein, receiving includes monitoring said predetermined port and sensing said DHCP discover message on said predetermined port (**listener will listen on a TCP port for notifications sent – Page. 17, [0282]**, **DHCP or client device listens for incoming connection requests on that socket and sets itself up to accept any incoming connections – Page. 23, [0399]**).

Regarding claim 17, Gu and Okano together taught the method of claim 14, as described above. Okano further teaches wherein, sending a DHCP offer (**Fig. 2, DHCP OFFER (M6), (M8)**) that includes said IP address (**Fig. 1, (M12) REGISTERATION OF IP1 (IP ADDRESS) in FILTERING TABLE BY DHCP**), after allocating said IP address, from within the client device (**Fig. 1, COMPLETION OF IP ADDRESS ALLOCATING**

BY DHCP).

Regarding claim 18, Gu and Okano together taught the method of claim 17, as described above. Okano further teaches wherein testing the availability of said IP address before sending said DHCP offer (the DHCP reply packets in response to the DHCP discovers and in which IP addresses pooled by the DHCP servers – Page. 5, [0092]**).**

Regarding claim 19, Gu and Okano together taught the method of claim 17, as described above. Gu further teaches wherein, sending a DHCP offer [see above rejection**] includes causing a packet driver to send said DHCP offer on a wireless network medium (**Fig. 25, unit 852 (LAN/WAN), a set-up and configuration process through which appropriate driver software is installed by a user or administrator onto the host for use in controlling the peripheral – Page. 1, [0005]**).**

Regarding claim 20, Gu and Okano together taught the method of claim 19, as described above. Gu further teaches wherein, said packet driver sends said DHCP offer on said wireless network medium without the use of sockets functionality (FIG. 25, unit 852 include a wide area network (WAN), FIG. 30, a client that accesses and uses the embedded computing device 900 over the computer network has an exemplary client software architecture 950, which includes software code modules for applications 952, simple discovery 954, XML 955, LDAP 956, TCP/IP****

stack 958 (WinSock) and a network interface card (NIC) 960 that provides a physical connection to the computer network – Page. 30, [0559]).

Regarding claim 21, Gu and Okano together taught the method of claim 17, as described above. Okano further teaches wherein receiving said DHCP offer within the client device (**Fig. 2, DHCP offer (M6 & M8) in subscriber terminal;**) and sending, after receiving said DHCP offer, a DHCP request that includes said IP address from within the client device (**Fig. 2, DHCP REQUEST (M9) from subscriber terminal).**

Regarding claim 22, Gu and Okano together taught the method of claim 21, as described above. Okano further teaches wherein, verifying that the IP address within the DHCP offer is available before sending said DHCP request (**the DHCP reply packets in response to the DHCP discover and in which IP addresses pooled by the DHCP servers – Page. 5, [0092]).**

Regarding claim 23, Gu and Okano together taught the method of claim 21, as described above. Okano further teaches wherein, receiving said DHCP request within the client device; and sending, after receiving said DHCP request [**see above rejection], a DHCP acknowledge (ACK) message from within the client device (Fig. 24, user control point send “200 OK”).** Gu further teaches wherein a DHCP acknowledge (ACK) message from within the client device (**Fig. 2, (DHCP “ACK” -- M11 & M12))**

Regarding claim 24, Gu and Okano together taught the method of claim 23, as described above. Okano further teaches wherein, receiving said DHCP ACK message within the client device (**Fig. 2, (DHCP “ACK” -- M11 & M12))**.

Regarding claim 25, Gu and Okano together taught the method of claim 14, as described above. Okano further teaches wherein, allocating includes using dynamic DHCP allocation (**DHCP to dynamically allocate an IP address – Abstract, lines 1-2**).

Regarding claim 26, Gu teaches wherein an article comprising storage media having instructions stored thereon that, when executed by a computing platform (**server, client terminal**), result in:

sending a DHCP discover message from within a client device (Fig. 29, unit 900 (computing device), unit 950 (Client device) send a (DHCP BROADCAST) discover listener (message));

receiving said DHCP discover message within the client device (Fig. 29, unit 900 -- computing device, unit 950 -- client device receive (DHCP BROADCAST) discover response (message))

With respect to claim 26, Gu teaches well the invention set forth above except for the claimed “*allocating an IP address to the client device in response to receiving said DHCP discover message, within the client device*”.

Okano teaches that it is well known to *allocating an IP address to the client device in response to receiving said DHCP discover message, within the client device* (a DHCP to dynamically allocate an IP address to a subscriber terminal – **Abstract, lines 1-2, a dynamic IP address allocation is automatically performed by the DHCP – Page. 1, [0006]).**

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Gu's invention by utilizing the DHCP system for allocating an IP address to the client device in response to receiving a DHCP discover message where as dynamic allocation is the only method which provides dynamic re-use of IP addresses. A network administrator assigns a range of IP addresses to DHCP, and each client computer on the LAN has its TCP/IP software configured to request an IP address from the DHCP server when that client computer's network interface card starts up. The request-and-grant process uses a lease concept with a controllable time period (as taught by Okano).

Regarding claim 27, Gu and Okano together taught the article of claim 26, as described above. Gu, further teaches wherein, sending includes sending said DHCP discover message to a predetermined port (TCP/IP provides the ability to initiate a connection with a specified application running on a specific device provided both the network address of the device (IP address) and the application address (port) are known – Page. 7, [0122], a TCP socket using its IP address and an arbitrary port number. This address/port pair will be referenced by all incoming

URL requests – Page. 23, [0398]).

Regarding claim 28, Gu and Okano together taught the article of claim 27, as described above. Gu, further teaches wherein, receiving includes monitoring said predetermined port and sensing said DHCP discover message on said predetermined port (**listener will listen on a TCP port for notifications sent – Page. 17, [0282], DHCP or client device listens for incoming connection requests on that socket and sets itself up to accept any incoming connections – Page. 23, [0399]).**

Regarding claim 29, Gu and Okano together taught the article of claim 26, as described above. Gu, further teaches wherein, sending a DHCP offer (**Fig. 2, DHCP OFFER -- M6, M8**) that includes said IP address (**Fig. 1, (M12) REGISTRATION OF IP1 (IP ADDRESS) in FILTERING TABLE BY DHCP**), after allocating said IP address, from within the client device (**Fig. 1, COMPLETION OF IP ADDRESS ALLOCATING BY DHCP**).

Regarding claim 30, Gu teaches wherein, a client device comprising:
a wireless network interface card (NIC) (Fig. 30, unit 960 (NIC), a network interface card (NIC) -- Page. 30, [0559]) to provide an interface to a wireless network medium (radio frequency (including satellite, cell, pager, commercial signal sideband, etc. – Page. 28, [0530]);
an ad-hoc client to manage connection of said client device to an ad-hoc wireless

network (ad-hoc self-set by devices to interoperate with other devices on a network – Abstract, lines 3-4);

a DHCP client to send a DHCP discover message in response to a command from said ad-hoc client (**Fig. 29, unit 900 (computing device), unit 950 (Client device) send a (DHCP BROADCAST) discover listener (message)**); and

a tinyDHCP unit (**modem, router, client computer, server**) to sense (**listen**) said DHCP discover message (**Fig. 29, unit 900 (computing device), unit 950 (client device) receive (DHCP BROADCAST) discover response (message)**).

With respect to claim 30, Gu teaches well the invention set forth above except for the claimed “*allocate an IP address for the client device in response thereto*”.

Okano teaches that it is well known to utilize a DHCP client to send a DHCP discover message in response to a command from said ad-hoc client (**Fig. 2, sending DHCP discover -- M1-M3**), allocate an IP address for the client device in response thereto (**a DHCP to dynamically allocate an IP address to a subscriber terminal – Abstract, lines 1-2, a dynamic IP address allocation is automatically performed by the DHCP – Page. 1, [0006]**).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Gu’s invention by utilizing the DHCP system for allocating an IP address to the client device in response to receiving a DHCP discover message where as dynamic allocation is the only method which provides dynamic re-use of IP addresses. A network administrator assigns a range of IP addresses to DHCP, and each client computer on the LAN has its TCP/IP software configured to request an IP address

from the DHCP server when that client computer's network interface card starts up. The request-and-grant process uses a lease concept with a controllable time period (as taught by Okano).

Regarding claim 31, Gu and Okano together taught the client device of claim 30, as described above, Gu further teaches wherein, said wireless NIC is configured (**NIC**) in accordance with the IEEE 802.11 (**router**) wireless networking standard (**Fig. 25, unit 820 personal computer communicates via unit 854 router/modem over the unit 852 (WAN)**).

Regarding claim 32, Gu and Okano together taught the client device of claim 30, as described above, Gu further teaches wherein, a packet driver to provide raw access to said wireless network medium for the tinyDHCP unit without using sockets functionality (**FIG. 25, unit 852 include a wide area network (WAN), FIG. 30, a client that accesses and uses the embedded computing device 900 over the computer network has an exemplary client software architecture 950, which includes software code modules for applications 952, simple discovery 954, XML 955, LDAP 956, TCP/IP stack 958 (WinSock) and a network interface card (NIC) 960 that provides a physical connection to the computer network – Page. 30, [0559]**).

Claim 33 has the similar limitation as of claim 3; therefore, it's rejected under the same rationale as in claim 3.

Claim 34 has the similar limitation as of claim 25; therefore, it's rejected under the same rationale as in claim 25.

Claims 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Gu**. U.S. App No. **US 2004/0260800** in view of **Okano**. U.S. App. No. **US 2002/0062485**, further in view of **Gardiner** U.S. Ap. No. **US 2003/0225864**.

Regarding claim 7, Gu and Okano together taught the method of claim 6, as described above. However, Gu and Okano do not explicitly teach *said tinyDHCP unit tests the availability of said IP address by sending an ICMP echo request*.

Gardiner teaches wherein, testing the availability of said IP address before sending said DHCP offer. (**A host could find an unused IP address on the subnet using the Internet Control Message Protocol (ICMP) ping command – Page. 1, [0009]**).

It would have been obvious to one ordinary skilled in the art at the time the invention was made to combine the teachings of Gardiner for testing the availability of IP address before sending DHCP offer. Motivation would be to complement the step of the known art that Gu and Okano attempt to resolve such enabling a host or client to obtain and reserve exclusive unique IP address with Gardner means that support obtaining a unique and reserved IP address.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sulaiman Nooristany whose telephone number is (571) 270-1929. The examiner can normally be reached on M-F from 9 to 5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeff Pwu, can be reached on (571) 272-6798. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sulaiman Nooristany 09/13/2007



JEFFREY PWU
SUPERVISORY PATENT EXAMINER